

Development of the Fernald Environmental Management Project Site Profile

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Energy Employees
Occupational Illness
Compensation Program
Act (EEOICPA)

EEOICPA – Department of Labor

Two Types of Claims

- Subtitle B
 - \$150,000 + medical expenses
 - Radiation-induced cancer
 - Beryllium disease
 - Silicosis
 - Radiation claims go to NIOSH for dose reconstruction
 - (This is what we are here to talk about.)***
- Subtitle E
 - Exposures to toxic chemicals
 - Can apply for both programs; no offset in benefits
 - Ombudsman

NIOSH – National Institute for
Occupational Safety and Health

Office of Compensation
Analysis and Support (OCAS)

Contractor – Oak Ridge Associated
Universities (ORAU) Team

Significant Dates

- December 2000: EEOICPA signed into law.
- July 2001: Department of Labor (DoL) began accepting claims.
- September 2002: ORAU Team awarded contract to support radiation dose reconstruction.
- Amended October 2004: all claims go to Department of Labor.

Purpose of Meeting

- Discuss the Fernald Environmental Management Project (FEMP) Site Profile.
- Describe what the Site Profile is used for.
- Ask for your suggestions and information.
- Document your concerns and issues.
- Answer your questions.

The Site Profile Supports Dose Reconstruction

The Site Profile:

- Is used by radiation specialists (Health Physicists) to reconstruct radiation doses.
- Provides site-specific technical information.
- Minimizes the interpretation of data.
- Is revised as new information comes to light.

Contents of the Site Profiles

The Site Profile has sections on:

- Site Description
- External Dose
- Internal Dosimetry
- Occupational Environmental Dose
- Occupational Medical Dose

Developing the FEMP Site Profile

- The FEMP Site Profile team was established in May 2003.
- The Team Leader is Mel Chew; the original Team Leader was Terry Kuykendall.
- The Site Profile is completed and has been approved by NIOSH.
- The Site Profile is on the NIOSH website:
<http://www.cdc.gov/niosh/ocas/ocastbds.html#fernald>

Purpose and Scope

The Site Profile:

- Is used to reconstruct radiation doses to workers at the FEMP.
- Covers the time from site construction in 1951 to the present.

FEMP Site Description

- Provides an overview of the facilities and activities at the FEMP, formerly the Feed Materials Production Center (FMPC), since 1951.
- Documents the radioactive materials and radiation sources at the sites.
- Identifies potential radiation exposures from occupational, environmental and medical radiation sources.

FEMP Site Description (Cont.)

- Production of high-purity uranium products.
- Long-term storage of thorium metals.
- Waste processing and management.
- Remediation of site.
- Significant radionuclides present: normal, enriched and depleted uranium; thorium; radon; and thoron.

Occupational External Dosimetry

We include information on:

- Sources of exposure
- Methods and practices
- Adjustments to recorded dose
- Minimum detectable levels (MDLs)

External Dosimetry (Cont.)

- Dosimeter technology
Beta, gamma, and x rays –
1951 to present
- Exchange frequency
- Workplace radiation fields
- Worker locations around sources

Occupational Internal Dosimetry

We include information on:

- Methods and practices.
- Sources of exposure.
- Minimum detectable activity (MDA) for:
 - Whole Body Counting
 - Urinalysis
- Reporting levels

Internal Dosimetry (Cont.)

- The bioassay program started in 1951.
- In-building air monitoring records are available beginning in 1952.
- Urine was tested for uranium.
- Gamma-emitting radioactive materials were measured in the body using a whole body counter beginning in 1968.

Occupational Environmental Dose

(for workers who were not monitored)

Workers who were not monitored could still be exposed to radiation on site from:

- Radioactive materials in the air.
- Radiation sources in buildings.
- Radioactive materials in the work environment.

Environmental External Dose

- The external radiation dose results from radiation sources inside buildings, radioactive wastes, storage, etc.
- Site-wide monitoring data are used to calculate the external dose for unmonitored workers.
- The average annual dose rate ranged from 0.009 to 0.019 mrem/h from 1951 to 2003.

Environmental Internal Dose

The environmental dose inside the body results from radioactive materials in the air on the site that the worker breathes. The annual intake of radioactive material is calculated from the average annual air concentration.

The primary radioactive materials were:

- Enriched, normal, and depleted uranium
- Natural thorium
- Radon
- Thoron

Occupational Medical Dose (X-rays)

- Frequency of employer-required x rays.
- X-ray equipment and techniques used.
- Use this information to reconstruct radiation doses.

Occupational X-ray Dose (Cont.)

- Only X-rays required by the employer are included.
- The X-ray equipment changed over time.
- Older equipment gave off more X-ray radiation resulting in higher doses.

In Conclusion

- Developing a usable Site Profile is an important task.
- The Site Profiles can change based on your input.

Sending Comments on Site Profile Directly to NIOSH

National Institute for Occupational
Safety and Health (NIOSH)

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NIOSH Office of Compensation Analysis and Support Website

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